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ABSTRACT OF THE DISCLOSURE

A vehicle safety system having crash detection circuitry and an airbag adjacent a vehicle seat further includes a system for determining the weight of a passenger on the vehicle seat. If the detected weight of the passenger does not exceed a predetermined weight threshold, the airbag is disabled. A forward sensor and a rear sensor are mounted in a vehicle seat adjacent a ferromagnetic structure element in the seat. The sensors measure strain on the ferromagnetic element, which is proportional to weight on the vehicle seat. A comparison of the measurements of the two sensors also provides an indication of the position of the passenger on the vehicle seat, such that the airbag may be disabled if the passenger is sitting too close to the airbag. Each of the sensors preferably comprises an electromagnet generating an oscillating magnetic field of a known frequency and a coil. Strain on the ferromagnetic element alters the magnetic field and such strain is detected by the coil. The detected change in the magnetic field is proportional to the weight of the passenger.